WHAT IS CLAIMED IS:

1. A microelectronic package comprising:

a microelectronic component having a mounting surface;

a substrate having a facing surface; and

an attachment layer that is interposed between and bonded to said mounting surface of said microelectronic component and said facing surface of said substrate so as to attach said microelectronic component onto said substrate;

wherein:

said attachment layer comprises a layer of an adhesive and plural generally ball-shaped spacer elements dispersed in said adhesive;

said spacer elements respectively have a nominal diameter that corresponds to a stand-off distance between said mounting surface of said microelectronic component and said facing surface of said substrate; and

said spacer elements comprise a plastic material that is at least slightly elastically flexible and resilient.

2. The microelectronic package according to claim 1, wherein said adhesive has a first coefficient of thermal expansion, and said plastic material of said spacer elements has a second coefficient of thermal expansion that at least approximately corresponds to said first coefficient of thermal expansion of said adhesive.

3. The microelectronic package according to claim 1, wherein said adhesive has a first coefficient of thermal expansion, and said plastic material of said spacer elements has a second coefficient of thermal expansion that is not less than one tenth of said first coefficient of thermal expansion of said adhesive.

4. The microelectronic package according to claim 1, wherein said spacer elements consist essentially of said plastic material, and said plastic material has a coefficient of thermal expansion on the order of $10^{-4}\,K^{-1}$ or $10^{-5}\,K^{-1}$.

5. The microelectronic package according to claim 4, wherein said coefficient of thermal expansion is in a range from $4 \times 10^{-5}\,K^{-1}$ to $6 \times 10^{-5}\,K^{-1}$.

6. The microelectronic package according to claim 5, wherein said plastic material is a mixture or copolymer of at least two different polymers.

7. The microelectronic package according to claim 1, wherein said plastic material is elastically flexible and resilient to such an extent so that said spacer elements exhibit an elastic flexible deformability of at least 1% of said nominal diameter in said attachment layer in said microelectronic package.

8. The microelectronic package according to claim 1, wherein said generally ball-shaped spacer elements respectively have a spherical or spheroidal shape.

9. The microelectronic package according to claim 1, wherein said nominal diameter is in a range from 150μm to 200μm.

10. The microelectronic package according to claim 1, wherein said spacer elements consist essentially of said plastic material, which consists essentially of a single polymer.

11. The microelectronic package according to claim 1, wherein said spacer elements consist essentially of said plastic material, which consists essentially of a mixture or copolymer of at least two different polymers.

12. The microelectronic package according to claim 1, wherein said spacer elements do not contain any silica glass, do not contain any alumina, and do not contain any metal.

13. The microelectronic package according to claim 1, wherein said attachment layer further comprises an anti-static agent applied to said spacer elements or mixed in said adhesive.

14. The microelectronic package according to claim 1, wherein said microelectronic component comprises a sensor.

15. The microelectronic package according to claim 1, wherein said adhesive is a silicone adhesive.

16. The microelectronic package according to claim 1, wherein said attachment layer is formed from a single drop of said adhesive with said spacer elements dispersed therein, which drop has been applied on said facing surface of said substrate at a location centered relative to said mounting surface of said microelectronic component, and which drop then has been pressed between said facing surface and said mounting surface and thereafter cured to form said attachment layer.

17. A method of manufacturing the microelectronic package according to claim 1, comprising the following steps:

applying a single drop of said adhesive with said spacer elements dispersed therein onto said facing surface of said substrate;

placing said microelectronic component onto said drop with said mounting surface centered on said drop;

pressing together said microelectronic component and said substrate with said drop therebetween, so as to flatten said drop into a layer until said spacer elements contact said mounting surface and said facing surface; and then

curing said adhesive.

18. A microelectronic package comprising:

a microelectronic component having a mounting surface;

a substrate having a facing surface; and

an attachment layer that is interposed between and bonded to said mounting surface of said microelectronic component and said facing surface of said substrate so as to attach said microelectronic component onto said substrate;

wherein:

said attachment layer comprises a layer of an adhesive and plural generally ball-shaped spacer elements dispersed in said adhesive;

said spacer elements respectively have a nominal diameter that corresponds to a stand-off distance between said mounting surface of said microelectronic component and said facing surface of said substrate;

said spacer elements comprise a plastic material that is at least slightly elastically flexible and resilient; and

said adhesive has a first coefficient of thermal expansion, and said plastic material of said spacer elements has a second coefficient of thermal expansion that at least approximately corresponds to said first coefficient of thermal expansion of said adhesive.

19. A microelectronic package comprising:

a microelectronic component having a mounting surface;

a substrate having a facing surface; and

an attachment layer that is interposed between and bonded to said mounting surface of said microelectronic component and said facing surface of said substrate so as to attach said microelectronic component onto said substrate;

wherein:

said attachment layer comprises a layer of an adhesive and plural generally ball-shaped spacer elements dispersed in said adhesive;

said spacer elements respectively have a nominal diameter that corresponds to a stand-off distance between said mounting surface of said microelectronic component and said facing surface of said substrate;

said spacer elements comprise a material that is at least slightly elastically flexible and resilient; and

said adhesive has a first coefficient of thermal expansion, and said material of said spacer elements has a second coefficient of thermal expansion that is not less than one tenth of said first coefficient of thermal expansion of said adhesive.